

## **REMARKS**

In a final Office Action dated April 19, 2006, the Examiner rejected claims 1-10, 12-14, 17-19, 23, 28-31, 36-39, and 41-45 under 35 U.S.C. §103(a) as being unpatentable over Schmutz (U.S. patent application publication no. 2001/0031621) in view of Durrant et al. (U.S. patent no. 6,501,955, hereinafter referred to as “Durrant”) and further in view of Nakatsugawa (U.S. patent application publication no. 2001/0014586). The Examiner rejected claims 20-22, 24, 34, and 35 under 35 U.S.C. §103(a) as being unpatentable over Schmutz in view of Durrant and Nakatsugawa and further in view of Periyalwar et al. (U.S. patent application publication no. 2004/0192204). The Examiner rejected claims 32 and 33 under 35 U.S.C. §103(a) as being unpatentable over Schmutz in view of Durrant and Nakatsugawa and further in view of Dinkins (U.S. patent no. 5,633,876). The Examiner rejected claim 40 under 35 U.S.C. §103(a) as being unpatentable over Schmutz in view of Durrant and Nakatsugawa and further in view of Argyroudis (U.S. patent no. 5,892,758). The rejections and objections are traversed and reconsideration is hereby respectfully requested.

The Examiner rejected claims 1-10, 12-14, 17-19, 23, 28-31, 36-39, and 41-45 under 35 U.S.C. §103(a) as being unpatentable over Schmutz in view of Durrant and further in view of Nakatsugawa. Claim 1 has been amended to provide for automatically determining whether to selectively allocate a wireless relay resource, providing an instruction to the wireless relay resource to cause the wireless relay resource to relay at least portions of the wireless transmission from the transmitter, wherein the instruction comprises providing at least identifying information regarding the transmitter, providing an instruction to the transmitter to convey a wireless transmission to the base site, and wherein knowledge of the wireless relay resource allocation is unnecessary to the transmitter. Support for the amendments may be found throughout the specification as the remote unit in the claimed embodiments nowhere requires any information concerning the allocated wireless relay resource. To the contrary, the specification permits the remote unit to operate completely independent of the allocated wireless relay resource.

The features of claim 1 are not taught by Schmutz, Durrant, or Nakatsugawa, individually or in combination. Schmutz merely teaches a low cost communication system wherein repeaters, instead of base sites, provide coverage to low density cells. That is, since a repeater is far less expensive than a base transceiver station (BTS), Schmutz teaches use of a repeater to provide wireless service in a low density cell instead of a BTS. The repeater then forwards wireless communications from mobile stations (MSs) residing in the cell to a “home” BTS and further forwards wireless communications from the BTS to the MSs residing in the cell. The repeater replaces a BTS in the low density cell and services all MSs residing in the cell; there is no automatic determination, by the BTS, whether to selectively allocate a repeater.

Therefore, Schmutz does not teach any automatically determining, by the BTS, whether to selectively allocate a repeater, let alone determining whether to selectively allocate a repeater to thereby at least attempt to increase a quality of service to support the wireless transmission from an MS that is presently within wireless communications wireless range of the BTS. Nor does Schmutz teach a providing, by the BTS, an instruction to the repeater to cause the repeater to relay at least portions of the wireless transmission from the MS. That is, the repeater relays all communications to and from all MSs residing in the repeater’s coverage area; the BTS does not provide an instruction to the repeater to cause the repeater to relay at least portions of the wireless transmission from the MS.

Furthermore, the repeater taught by Schmutz is the endpoint of the air interface with the MSs in the cell serviced by the repeater. Schmutz teaches handoffs between cells, that is, among repeaters, and provision of neighbor lists to MSs that are used by the MS to facilitate a handoff of a call from one cell, that is, repeater, to another cell/repeater. Therefore, an MS of Schmutz must be aware of the repeater serving the MS. Accordingly, Schmutz further does not teach the feature of claim 1 wherein the knowledge of the wireless relay resource allocation is unnecessary to the transmitter.

Durrant teaches a self-determining, by a repeater, whether to activate. As acknowledged by the Examiner, Durrant does not teach the feature of automatically determining, by a base site, whether to selectively allocate a repeater and providing, by

the base site, an instruction to the repeater to cause the repeater to relay at least portions of the wireless transmission from the MS.

Nakatsugawa teaches a WLAN communication structure. The MS must be informed of the address of the assigned repeater as the MS will be communicating over the air interface with the assigned repeater and not with the selector (the master repeater, unless the master repeater selects itself). The MS then negotiates a communication with the assigned repeater. By contrast, the teachings of claim 1 provide that the knowledge of the allocation of the wireless relay resource is unnecessary to an MS. Thus, claim 1 teaches that the access network endpoint intended by the MS, that is, the base site, may select and instruct an intermediate relay resource to participate in a communication session, which selection and participation may be unbeknownst to the MS and over which the MS may exercise no control. Meanwhile the MS continues to believe it is communicating with, intend its communications for, and conveys its communications to, the base site. By contrast, Nakatsugawa, teaches a selection of an access network endpoint to the air interface, an informing of the MS of the endpoint, and a negotiation between the MS and the selected endpoint. Furthermore, the assigned repeater of Nakatsugawa is not a relay; it is, instead, an access network endpoint.

One may further note that a combining of the systems of Schmutz, Durrant, and Nakatsugawa into a system wherein the knowledge of the wireless relay resource allocation is unnecessary to the transmitter would make no sense. The systems of both Schmutz and Nakatsugawa rely on the MS being aware of the repeaters, as the repeaters in both systems serve as an end point of the air interface opposite the MS and as the MS may be handed off among repeaters. Therefore, to combine Schmutz and Nakatsugawa into a system wherein the transmitter has no knowledge of the repeater would make no sense and actually prevent the proper operation of both Schmutz and Nakatsugawa.

Therefore, none of Schmutz, Durrant, or Nakatsugawa, individually or in combination, teaches the features of claim 1 of automatically determining, at a base site, whether to selectively allocate a wireless relay resource intermediate between the base site and the transmitter to thereby at least attempt to increase a quality of service to support the wireless transmission from the transmitter, wherein the wireless relay

resource comprises a demodulation processing relay resource, providing, at the base site, an instruction to the transmitter to convey a wireless transmission to the base site, providing, at the base site, an instruction to the wireless relay resource to cause the wireless relay resource to relay at least portions of the wireless transmission from the transmitter, wherein the instruction comprises providing at least identifying information regarding the transmitter, and wherein the knowledge of the wireless relay resource allocation is unnecessary to the transmitter. Accordingly, the applicants respectfully request that claim 1 may now be passed to allowance.

Since claims 2-10, 12-15, 17-25, 28-40, 46, and 47 depend upon allowable claim 1, the applicants respectfully request that claims 2-10, 12-15, 17-25, 28-40, 46, and 47 may now be passed to allowance.

Claim 41 has been amended to provide a communications controller configured to operate at a base site and including a relay resource activator such that a wireless relay resource intermediate between the base site and the transmitter and having a demodulation processing relay resource can be selectively activated by the communications controller to improve quality of service for a wireless transmission from the remote unit when transmitting within wireless reception range of the receiver and provides an instruction to the relay resource to cause the relay resource to relay at least portion of the wireless transmission from the remote unit, wherein the instruction comprises providing at least identifying information regarding the remote unit, and a means for providing an instruction to the remote unit to convey a wireless transmission to the base site, wherein the knowledge of the wireless relay resource allocation is unnecessary for the transmitter. As described in detail above, Schmutz, Durrant, and Nakatsugawa, individually or in combination, do not teach such a communications controller.

Accordingly, the applicants respectfully request that claim 41 may now be passed to allowance.

Since claims 42-45 depend upon allowable claim 41, the applicants respectfully request that claims 42-45 may now be passed to allowance.

As the applicants have overcome all substantive rejections and objections given by the Examiner and have complied with all requests properly presented by the Examiner, the applicants contend that this Amendment, with the above discussion, overcomes the Examiner's objections to and rejections of the pending claims. Therefore, the applicants respectfully solicit allowance of the application. If the Examiner is of the opinion that any issues regarding the status of the claims remain after this response, the Examiner is invited to contact the undersigned representative to expedite resolution of the matter.

Respectfully submitted,  
Philippe Sartori et al.

By: Steven May

Steven A. May  
Attorney for Applicants  
Registration No. 44,912  
Phone No.: 847/576-3635  
Fax No.: 847/576-3750